SEQUENCE LISTING

<110> McCarthy, Sean A.

<120> NOVEL CRSP PROTEIN AND NUCLEIC ACID MOLECULES AND USES THEREFOR

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<151> 1997-04-17

<150> 60/071,589

<151> 1998-01-15

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<170> PatentIn Ver. 2.0

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By By

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- Ala Ser Ser Glu Val Asn Leu Ala Asn Leu Pro Pro Ser Tyr His Asn 85 90 95
- Glu Thr Asn Thr Asp Thr Asn Val Gly Asn Asn Thr Ile His Val His
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- Gly His Cys Thr Lys Met Ala Thr Arg Gly Ser Asn Gly Thr Ile Cys
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F I	eat His 160	ttt Phe	tgg Trp	acg Thr	- 75	att Ile 165	tgt Cys	aag Lys	cca Pro	gtc Val	ctt Leu 170	ttg Leu	gag Glu	gga Gly	cag Gln	gtc Val 175	649
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Gly Ile Leu Tyr Pro Gly Gly Asn Lys Tyr Gln Thr Ile Asp Asn Tyr 65 70 75 80

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105

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ccc ggg aat tac tgc aaa aat gga ata tgc gtg tct Pro Gly Asn Tyr Cys Lys Asn Gly Ile Cys Val Ser 130 135 140	Ser Asp Gln Asn
cat ttc cga gga gaa att gag gaa acc atc act gaa His Phe Arg Gly Glu Ile Glu Glu Thr Ile Thr Glu 145 150 155	
gat cat agc acc ttg gat ggg tat tcc aga aga acc Asp His Ser Thr Leu Asp Gly Tyr Ser Arg Arg Thr 165 170	
aaa atg tat cac acc aaa gga caa gaa ggt tct gtt Lys Met Tyr His Thr Lys Gly Gln Glu Gly Ser Val 180 185	
tca gac tgt gcc tca gga ttg tgt tgt gct aga cac Ser Asp Cys Ala Ser Gly Leu Cys Cys Ala Arg His 195 200	
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gaa ggt ctg tct tgc cgg ata cag aaa gat cac cat Glu Gly Leu Ser Cys Arg Ile Gln Lys Asp His His 245 250	
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														ata Ile 95		288
														gaa Glu		336
														gtg Val		384
														cat His		432
-	_			_	~	_	_	_		_				tgc Cys		480
														gtg Val 175		528
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Asp Gly Met Cys Cys Pro Ser Thr Arg Cys Asn Asn Gly Ile Cys Ile 35 40 45

Pro Val Thr Glu Ser Ile Leu Thr Pro His Ile Pro Ala Leu Asp Gly
50 55 60

Thr Arg His Arg Asp Arg Asn His Gly His Tyr Ser Asn His Asp Leu 65 70 75 80

Gly Trp Gln Asn Leu Gly Arg Pro His Thr Lys Met Ser His Ile Lys 85 90 95

Gly His Glu Gly Asp Pro Cys Leu Arg Ser Ser Asp Cys Ile Glu Gly
100 105 110

Phe Cys Cys Ala Arg His Phe Trp Thr Lys Ile Cys Lys Pro Val Leu 115 120 120

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gat ggc atg tgc tgc ccc agt acc cgc tgc aat aat ggc atc tgt atc 144 Asp Gly Met Cys Cys Pro Ser Thr Arg Cys Asn Asn Gly Ile Cys Ile 45
cca gtt act gaa agc atc tta acc cct cac atc ccg gct ctg gat ggt 192 Pro Val Thr Glu Ser Ile Leu Thr Pro His Ile Pro Ala Leu Asp Gly 50 50
act cgg cac aga gat cga aac cac ggt cat tac tca aac cat gac ttg 240 Thr Arg His Arg Asp Arg Asn His Gly His Tyr Ser Asn His Asp Leu 70 75 80
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ggg cat gaa gga gac ccc tgc cta cga tca tca gac tgc att gaa ggg 336 Gly His Glu Gly Asp Pro Cys Leu Arg Ser Ser Asp Cys Ile Glu Gly 100 105
ttt tgc tgt gct cgt cat ttc tgg acc aaa atc tgc aaa cca gtg ctc 384 Phe Cys Cys Ala Arg His Phe Trp Thr Lys Ile Cys Lys Pro Val Leu 115 120 125
cat cag ggg gaa gtc tgt acc aaa caa cgc aag aag ggt tct cat ggg 432 His Gln Gly Glu Val Cys Thr Lys Gln Arg Lys Lys Gly Ser His Gly 130 135
ctg gaa att ttc cag cgt tgc gac tgt gcg aag ggc ctg tct tgc aaa 480 Leu Glu Ile Phe Gln Arg Cys Asp Cys Ala Lys Gly Leu Ser Cys Lys 150 155 160
gta tgg aaa gat gcc acc tac tcc tcc aaa gcc aga ctc cat gtg tgt 528 Val Trp Lys Asp Ala Thr Tyr Ser Ser Lys Ala Arg Leu His Val Cys 165 170 175
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							gct Ala									206
							ctc Leu									254
							ata Ile									302
							aac Asn									350
							ctc Leu 100									398
							gag Glu									446
gca Ala 125	tcc Ser	att Ile	caa Gln	cca Pro	gcg Ala 130	gag Glu	gjà aaa	agc Ser	ttc Phe	gag Glu 135	ggt Gly	gat Asp	ttg Leu	aag Lys	gta Val 140	494
							gcc Ala									542
							cat His									590
							cac His 180									638
tgg Trp	ctc Leu 190	agc Ser	gag Glu	aag Lys	cga Arg	cac His 195	cgc Arg	ctg Leu	cag Gln	gcc Ala	atc Ile 200	cgg Arg	gat Asp	gga Gly	ctc Leu	686
							gtc Val									734
							cga Arg									782

928

agg ecc tet egg eag etg taggggtggg gaeeggggag eacetgeetg Arg Pro Ser Arg Gln Leu 240 tageccecat cagaccetge eccaageace atatggaaat aaagttettt ettacateta 890 aaaaaaaaaa aaaaaaaaaaaaaaaa gcggccgc <210> 14 <211> 242 <212> PRT <213> Homo sapiens <400> 14 Met Gly Glu Ala Ser Pro Pro Ala Pro Ala Arg Arg His Leu Leu Val 10 Leu Leu Leu Leu Ser Thr Leu Val Ile Pro Ser Ala Ala Pro 20 25 Ile His Asp Ala Asp Ala Gln Glu Ser Ser Leu Gly Leu Thr Gly Leu Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu Phe Leu Lys Gly Asn Leu 50 55 Leu Arg Gly Ile Asp Ser Leu Phe Ser Ala Pro Met Asp Phe Arg Gly 75 Leu Pro Gly Asn Tyr His Lys Glu Glu Asn Gln Glu His Gln Leu Gly 90 Asn Asn Thr Leu Ser Ser His Leu Gln Ile Asp Lys Met Thr Asp Asn Lys Thr Gly Glu Val Leu Ile Ser Glu Asn Val Val Ala Ser Ile Gln 120 Pro Ala Glu Gly Ser Phe Glu Gly Asp Leu Lys Val Pro Arg Met Glu 130 135 140 Glu Lys Glu Ala Leu Val Pro Ile Gln Lys Ala Thr Asp Ser Phe His 150 Thr Glu Leu His Pro Arg Val Ala Phe Trp Ile Ile Lys Leu Pro Arg 165 170 Arg Arg Ser His Gln Asp Ala Leu Glu Gly Gly His Trp Leu Ser Glu 185 Lys Arg His Arg Leu Gln Ala Ile Arg Asp Gly Leu Arg Lys Gly Thr

200

215

210

His Lys Asp Val Leu Glu Glu Gly Thr Glu Ser Ser His Ser Arg

Leu Ser Pro Arg Lys Thr His Leu Leu Tyr Ile Leu Arg Pro Ser Arg

230

Gln Leu <210> 15 <211> 726 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(726) <400> 15 atg gga gaa gcc tcc cca cct gcc ccc gca agg cgg cat ctg ctg gtc Met Gly Glu Ala Ser Pro Pro Ala Pro Ala Arg Arg His Leu Leu Val 48 ctg ctg ctc ctc tct acc ctg gtg atc ccc tcc gct gca gct cct Leu Leu Leu Leu Ser Thr Leu Val Ile Pro Ser Ala Ala Ala Pro 96 20 25 atc cat gat gct gac gcc caa gag agc tcc ttg ggt ctc aca ggc ctc Ile His Asp Ala Asp Ala Gln Glu Ser Ser Leu Gly Leu Thr Gly Leu 144 cag age cta etc caa gge tte age ega ett tte etg aaa ggt aac etg Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu Phe Leu Lys Gly Asn Leu 192 55 ctt cgg ggc ata gac agc tta ttc tct gcc ccc atg gac ttc cgg ggc Leu Arg Gly Ile Asp Ser Leu Phe Ser Ala Pro Met Asp Phe Arg Gly 240 ctc cct ggg aac tac cac aaa gag gag aac cag gag cac cag ctg ggg Leu Pro Gly Asn Tyr His Lys Glu Glu Asn Gln Glu His Gln Leu Gly 288 85 aac aac acc ctc tcc agc cac ctc cag atc gac aag atg acc gac aac Asn Asn Thr Leu Ser Ser His Leu Gln Ile Asp Lys Met Thr Asp Asn 336 105 aag aca gga gag gtg ctg atc tcc gag aat gtg gtg gca tcc att caa Lys Thr Gly Glu Val Leu Ile Ser Glu Asn Val Val Ala Ser Ile Gln 384 120 125 cca gcg gag ggg agc ttc gag ggt gat ttg aag gta ccc agg atg gag Pro Ala Glu Gly Ser Phe Glu Gly Asp Leu Lys Val Pro Arg Met Glu 432 gag aag gag gcc ctg gta ccc atc cag aag gcc acg gac agc ttc cac Glu Lys Glu Ala Leu Val Pro Ile Gln Lys Ala Thr Asp Ser Phe His 480 150

aca gaa ctc cat ccc cgg gtg gcc ttc tgg atc att aag ctg cca cgg Thr Glu Leu His Pro Arg Val Ala Phe Trp Ile Ile Lys Leu Pro Arg 165 170 175	528
180 185 190	576
aag cga cac cgc ctg cag gcc atc cgg gat gga ctc cgc aag ggg acc 6 Lys Arg His Arg Leu Gln Ala Ile Arg Asp Gly Leu Arg Lys Gly Thr 195 200 205	24
210 215 220	72
ctg tcc ccc cga aag acc cac tta ctg tac atc ctc agg ccc tct cgg 72 Leu Ser Pro Arg Lys Thr His Leu Leu Tyr Ile Leu Arg Pro Ser Arg 225 230 235 240	20
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gct cct gct cct tcc ccg acg gtc act tgg act ccg gcg gag ccg ggc 214 Ala Pro Ala Pro Ser Pro Thr Val Thr Trp Thr Pro Ala Glu Pro Gly 20 25 30 35	
cca gct ctc aac tac cct cag gag gaa gct acg ctc aat gag atg ttt 262 Pro Ala Leu Asn Tyr Pro Gln Glu Glu Ala Thr Leu Asn Glu Met Phe 40 45 50	
cga gag gtg gag gag ctg atg gaa gac act cag cac aaa ctg cgc agt 310 Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys Leu Arg Ser 55 60 65	

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			Gly aaa								550
			tgt Cys								598
			cag Gln								646
			tgt Cys 185								694
			aaa Lys								742
			ggc Gly								790
			ccc Pro								838
	-	_	 ctg Leu	-			_	-		_	886
			tgc Cys 265								934
			gtg Val								982

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ctg gag cgg agc cta gcc cag gag atg gca ttt gag ggg cct gcc cct 1126 Leu Glu Arg Ser Leu Ala Gln Glu Met Ala Phe Glu Gly Pro Ala Pro 325 330 335
gtg gag tca cta ggc gga gag gag att taggcccaga cccagctgag 1176 Val Glu Ser Leu Gly Gly Glu Glu Ile 340 345
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Glu Pro Gly Pro Ala Leu Asn Tyr Pro Gln Glu Glu Ala Thr Leu Asn 35 40 45

Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys
50 55 60

Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Ala Lys
65 70 75 80

Thr Ser Ser Glu Val Asn Leu Ala Ser Leu Pro Pro Asn Tyr His Asn 85 90 95

Glu Thr Ser Thr Glu Thr Arg Val Gly Asn Asn Thr Val His Val His 100 105 110

Gln Glu Val His Lys Ile Thr Asn Asn Gln Ser Gly Gln Val Val Phe
115 120 125

Ser Glu Thr Val Ile Thr Ser Val Gly Asp Glu Glu Gly Lys Arg Ser 130 135 140

His Glu Cys Ile Ile Asp Glu Asp Cys Gly Pro Thr Arg Tyr Cys Gln 145 150 155 160

Phe Ser Ser Phe Lys Tyr Thr Cys Gln Pro Cys Arg Asp Gln Gln Met 165 170 175

Leu Cys Thr Arg Asp Ser Glu Cys Cys Gly Asp Gln Leu Cys Ala Trp
180 185 190

Gly His Cys Thr Gln Lys Ala Thr Lys Gly Gly Asn Gly Thr Ile Cys 195 200 205

Asp Asn Gln Arg Asp Cys Gln Pro Gly Leu Cys Cys Ala Phe Gln Arg 210 215 220

Gly Leu Leu Phe Pro Val Cys Thr Pro Leu Pro Val Glu Gly Glu Leu 225 230 235 240

Cys His Asp Pro Thr Ser Gln Leu Leu Asp Leu Ile Thr Trp Glu Leu 245 250 255

- 99 -Glu Pro Glu Gly Ala Leu Asp Arg Cys Pro Cys Ala Ser Gly Leu Leu 260 265 Cys Gln Pro His Ser His Ser Leu Val Tyr Met Cys Lys Pro Ala Phe 280 Val Gly Ser His Asp His Ser Glu Glu Ser Gln Leu Pro Arg Glu Ala Pro Asp Glu Tyr Glu Asp Val Gly Phe Ile Gly Glu Val Arg Gln Glu 315 Leu Glu Asp Leu Glu Arg Ser Leu Ala Gln Glu Met Ala Phe Glu Gly 325 330 Pro Ala Pro Val Glu Ser Leu Gly Gly Glu Glu Ile 345 <210> 18 <211> 1047 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(1047) <400> 18 atg cag cgg ctc ggg ggt att ttg ctg tgt aca ctg ctg gcg gcg Met Gln Arg Leu Gly Gly Ile Leu Leu Cys Thr Leu Leu Ala Ala Ala 48 5 gtc ccc act gct cct gct cct tcc ccg acg gtc act tgg act ccg gcg Val Pro Thr Ala Pro Ala Pro Ser Pro Thr Val Thr Trp Thr Pro Ala 20 gag ccg ggc cca gct ctc aac tac cct cag gag gaa gct acg ctc aat Glu Pro Gly Pro Ala Leu Asn Tyr Pro Gln Glu Glu Ala Thr Leu Asn 35 40 gag atg ttt cga gag gtg gag gag ctg atg gaa gac act cag cac aaa Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys 192

55

70

85

100

ctg cgc agt gcc gtg gag gag atg gag gcg gaa gaa gca gct gct aaa

Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Lys

acg tec tet gag gtg aac etg gea age tta eet eec aac tat eac aat

Thr Ser Ser Glu Val Asn Leu Ala Ser Leu Pro Pro Asn Tyr His Asn

gag acc agc acg gag acc agg gtg gga aat aac aca gtc cat gtg cac Glu Thr Ser Thr Glu Thr Arg Val Gly Asn Asn Thr Val His Val His

105

90

240

288

GIII		vai 1 115	als	ьуs	116	e Th	r As 12	sn A	sn (Gln	s Se	r G	ly G 1	ln 25	Val	. Vá	al	Phe	384
	130	1111.	/aI	11e	Thr	13!	r Va 5	I G.	Ly A	Asp	Glı	u G] 14	lu G 10	ly .	Lys	Ar	g	Ser	432
cat q His (145	31u (ys I	ie.	тте	150	GII	ı As	ь сл	s C	3ly	Pro 155	Th	ır Ai	rg '	Гуr	Су	s (31n 160	480
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cta t Leu C	ys I	1:	80 80	sp	ser	Glu	Cys	3 Cy 18	s G 5	ly	Asp	Gl	n Le	u C	'ys 90	Ala	a T	'rp	576
ggt c Gly H	1	95 11	II G	'TII I	Lys	АІа	200	Ly.	s G	ly	Gly	Ası	1 Gl 20	у Т 5	hr	Ile	e C	ys	624
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ggc ct Gly Le 225	ou be	u Pi	ie Pi	2	230	Cys	Thr	Pro) Le	eu I	Pro 235	Val	Glı	ı G	ly (Glu	Le 24	eu 10	720
tgc ca Cys Hi	LS AS	p Pr	0 Tr 24	ır S 15	er (Gln	Leu	Leu	25	p I 0	Leu	Ile	Thr	Tì	rp (31u 255	Le	u	768
gag co Glu Pr	O GI	26	0 Y A1	.a L	eu A	Asp	Arg	Cys 265	Pr	o C	:ys	Ala	Ser	G1 27	y I 0	Leu	Le	u	816
tgc ca Cys Gl	27	5	. se	I H	is s	er	Leu 280	Val	Ty	r M	let (Cys	Lys 285	Pr	o A	la	Ph	е	864
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ccg ga Pro As _l 305	t gag p Gli	g tac ı Tyr	ga:	a ga u As 31	sp v	tt q	ggc	ttc Phe	ata Ile	9 G.	15 15	gaa Glu	gtg Val	cg Arg	c c g G	ln	ga Gl 320	1	960
ctg gaa Leu Gli	a gad u Asp	ctg Leu	gag Glu 325	ı Ar	ig a ig S	gc o er I	cta Leu	gcc Ala	cag Gln 330	G]	ag a lu M	itg let	gca Ala	ttt Phe) G.	ag lu (gl} aas	J	1008

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1047

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ccc gct ccg acg gcg acc tcg gct cca gtc aag ccc ggc ccg gct ctc 151 Pro Ala Pro Thr Ala Thr Ser Ala Pro Val Lys Pro Gly Pro Ala Leu 25 30 35
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gag gaa ctg atg gag gac acg cag cac aaa ttg cgc agc gcg gtg gaa 247 Glu Glu Leu Met Glu Asp Thr Gln His Lys Leu Arg Ser Ala Val Glu 55 60 65 70

80

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GI	ı As	р Су	s Gl	y Pro 15!	o Ser 5	Met	Tyr	Cys	160	ı Ph∈	e Ala	a Ser	Phe	16!		535
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Cys	Inr	Pro	Leu	Pro 235	Val	Glu	Gly	Glu	Leu 240	Cys	His	gac Asp	Pro	Ala 245	Ser	775
Arg	neu	Leu	250	Leu	Ile	Thr	Trp	Glu 255	Leu	Glu	Pro	gat Asp	Gly 260	Ala	Leu	823
Asp	Arg	265	Pro	Cys	Ala	Ser	Gly 270	Leu	Leu	Cys	Gln	ccc Pro 275	His	Ser	His	871
ser	280	vai	Tyr	val	Cys	Lys 285	Pro '	Thr	Phe	Val	Gly 290	agc Ser	Arg	Asp	Gln	919
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Lys Pro Gly Pro Ala Leu Ser Tyr Pro Gln Glu Glu Ala Thr Leu Asn 35 40 45

Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys
50 55 60

Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Lys
65 70 75 80

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Arg Glu Ile His Lys Ile Thr Asn Asn Gln Thr Gly Gln Met Val Phe

Ser Glu Thr Val Ile Thr Ser Val Gly Asp Glu Glu Gly Arg Arg Ser 130 135 140

Phe Ala Ser Phe Gln Tyr Thr Cys Gln Pro Cys Arg Gly Gln Arg Met 165 170 175

Leu Cys Thr Arg Asp Ser Glu Cys Cys Gly Asp Gln Leu Cys Val Trp
180 185 190

Gly His Cys Thr Lys Met Ala Thr Arg Gly Ser Asn Gly Thr Ile Cys 195 200 205

Asp Asn Gln Arg Asp Cys Gln Pro Gly Leu Cys Cys Ala Phe Gln Arg 210 215 220

Gly Leu Leu Phe Pro Val Cys Thr Pro Leu Pro Val Glu Gly Glu Leu 235 230 235

Cys His Asp Pro Ala Ser Arg Leu Leu Asp Leu Ile Thr Trp Glu Leu 245 250 255

Glu Pro Asp Gly Ala Leu Asp Arg Cys Pro Cys Ala Ser Gly Leu Leu 260 Cys Gln Pro His Ser His Ser Leu Val Tyr Val Cys Lys Pro Thr Phe 280 Val Gly Ser Arg Asp Gln Asp Gly Glu Ile Leu Leu Pro Arg Glu Val Pro Asp Glu Tyr Glu Val Gly Ser Phe Met Glu Glu Val Arg Gln Glu 310 315 Leu Glu Asp Leu Glu Arg Ser Leu Thr Glu Glu Met Ala Leu Arg Glu 330 Pro Ala Ala Ala Ala Ala Leu Leu Gly Arg Glu Glu Ile 345 <210> 3 <211> 1050 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(1050) <400> 3 atg cag cgg ctt ggg gcc acc ctg ctg tgc ctg ctg ctg gcg gcg 48 Met Gln Arg Leu Gly Ala Thr Leu Leu Cys Leu Leu Leu Ala Ala Ala 1 gtc ccc acg gcc ccc gcg ccc gct ccg acg gcg acc tcg gct cca gtc Val Pro Thr Ala Pro Ala Pro Ala Pro Thr Ala Thr Ser Ala Pro Val 25 aag eee gge eeg get ete age tae eeg eag gag gee ace ete aat Lys Pro Gly Pro Ala Leu Ser Tyr Pro Gln Glu Glu Ala Thr Leu Asn 144 35 gag atg ttc cgc gag gtt gag gaa ctg atg gag gac acg cag cac aaa Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys 192 ttg cgc agc gcg gtg gaa gag atg gag gca gaa gaa gct gct aaa Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Ala Lys 240 70 75 80 gca tca tca gaa gtg aac ctg gca aac tta cct ccc agc tat cac aat Ala Ser Ser Glu Val Asn Leu Ala Asn Leu Pro Pro Ser Tyr His Asn 288 85 90 gag acc aac aca gac acg aac gtt gga aat aat acc atc cat gtg cac Glu Thr Asn Thr Asp Thr Asn Val Gly Asn Asn Thr Ile His Val His

105

Arg	GI	111	e Hi 5	s Ly	s Il	e Th:	120	n As O	n Gl	n Th	ır Gl	y Gl 12	n Me 5	t Va	c ttt	
ser	130	ı Thi	r Va	1 II	e Th:	r Ser 139	r Val	l Gl	y As	p Gl	u Gl 14	u Gl	y Ar	g Ar	g agc g Ser	432
cac His 145	gag Glu	Cys	c ate	c ato	gad Asp 150	Glu	g gad 1 Asp	c tg c Cy:	t ggg	g cc y Pr 15	o Se	c ato	g ta t Ty	c tg r Cy	c cag s Gln 160	480
Pne	АІА	ser	r Phe	165	туг Б	Thr	. Cys	Glr	1 Pro	o Cy:	s Ar	g Gly	/ Glı	1 Ar	_	528
ctc Leu	tgc Cys	acc Thr	cgg Arg 180	Asp	agt Ser	gag Glu	tgc Cys	tgt Cys 185	Gl _y	a gad / Asp	c cag	g ctg n Lei	tgt Cys 190	va:	c tgg l Trp	576
ggt Gly	cac His	tgc Cys 195	Thr	aaa Lys	atg Met	gcc Ala	acc Thr 200	agg Arg	ggy Gly	ago Ser	aat Asr	205	Thr	ato Ile	tgt Cys	624
Asp	aac Asn 210	cag Gln	agg Arg	gac Asp	tgc Cys	cag Gln 215	ccg Pro	Gly	ctg Leu	tgc Cys	tgt Cys 220	3 Ala	ttc Phe	caç Glr	g aga n Arg	672
ggc Gly 225	ctg Leu	ctg Leu	ttc Phe	cct Pro	gtg Val 230	tgc Cys	aca Thr	ccc Pro	ctg Leu	ccc Pro 235	gtg Val	gag Glu	ggc	gag Glu	ctt Leu 240	720
tgc (Cys)	cat His	gac Asp	ccc Pro	gcc Ala 245	agc Ser	cgg Arg	ctt Leu	ctg Leu	gac Asp 250	ctc Leu	atc Ile	acc Thr	tgg Trp	gag Glu 255	cta Leu	768
gag (Glu 1	Pro .	Asp	260 GIY	Ala	Leu	Asp	Arg	Cys 265	Pro	Cys	Ala	Ser	Gly 270	Leu	Leu	816
tgc (Cys (±in .	Pro 275	His	Ser	His	Ser	Leu 280	Val	Tyr	Val	Cys	Lys 285	Pro	Thr	Phe	864
	990 319 8	ser	Arg	Asp	Gln	Asp 295	Gly	Glu	Ile	Leu	Leu 300	Pro	Arg	Glu	Val	912
ccc g Pro A 305	at o	gag Slu	tat Tyr	Glu	gtt Val 310	ggc Gly	agc Ser	ttc Phe	atg Met	gag Glu 315	gag Glu	gtg Val	cgc Arg	cag Gln	gag Glu 320	960
ctg g Leu G	ag g lu A	gac Asp	Leu	gag Glu . 325	agg Arg	agc (Ser :	ctg a Leu '	Thr	gaa Glu 330	gag Glu	atg Met	gcg Ala	Leu	agg Arg 335	gag Glu	1008

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Se	r tg r Cy 14	s Le	g ag u Ar	a ac g Th	t tt r Ph	t gad e Ası 150	o Cys	ggo Gly	c cc y Pro	t gg o Gl	ya ct y Le 15	u Cy	rs Cy	gt go /s Al	et egt La Arg
са Ні 16	s Pn	t tg e Tr	g ac p Th	g aa r Ly	a att s Ile 165	e Cys	aag Lys	g cca Pro	a gto Val	c ct l Le 17	u Le	g ga u Gl	g gg u Gl	ja ca .y Gl	ng gtc n Val 175
tg Cy	c tc s Se	c ag r Ar	a ag g Ar	a ggg g Gl ₁ 180	y His	aaa Lys	gac Asp	act Thr	gct Ala 185	a Gl	a gc n Ala	t cc a Pr	a ga o Gl	a at u Il 19	c ttc e Phe 0
ca Gl:	g cg n Arg	t tg	c gad s Ası 19!	o Cys	ggc Gly	cct Pro	gga Gly	cta Leu 200	. Leu	g tg:	t cga s Arg	a ag g Se:	c ca r Gl 20	n Le	g acc u Thr
ago Sei	c aat	210	g Gir	g cat n His	gct Ala	cga Arg	tta Leu 215	aga Arg	gta Val	tgo Cys	c caa s Glr	a aaa 1 Lys 220	s Il	a ga e Gl	a aag u Lys
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Met 1	Val	Ala		5	Leu Asp				10					15 Asp	i
Met 1 Gly	Val Ala	Ala Leu	Val 20	Leu		Phe	Asn	Asn 25	10 Ile	Arg	Ser	Ser	Ala 30	15 Asp	Leu
Met 1 Gly His	Val Ala Gly	Ala Ala 35	Val 20 Arg	Leu Lys	Asp	Phe Ser	Asn Gln 40	Asn 25 Cys	10 Ile Leu	Arg Ser	Ser Asp	Ser Thr 45	Ala 30 Asp	Asp Cys	Leu Asn
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Met 1 Gly His Thr 65 Pro	Ala Gly Arg 50 Cys	Ala Ala 35 Lys Arg	Val 20 Arg Phe Gly Leu	Leu Lys Cys Leu Cys 85	Asp Gly Leu Arg 70	Phe Ser Gln 55 Arg	Asn Gln 40 Pro Arg	Asn 25 Cys Arg Cys	10 Ile Leu Asp Gln Cys 90	Arg Ser Glu Arg 75 Thr	Ser Asp Lys 60 Asp	Ser Thr 45 Pro Ala	Ala 30 Asp Phe Met	Asp Cys Cys Cys Asp 95	Leu Asn Ala Cys 80 Ala
Met 1 Gly His Thr 65 Pro	Ala Gly Arg 50 Cys Gly Pro	Ala Ala 35 Lys Arg Thr	Val 20 Arg Phe Gly Leu 100	Leu Lys Cys Leu Cys 85	Asp Gly Leu Arg 70 Val	Phe Ser Gln 55 Arg Asn Gln	Asn Gln 40 Pro Arg	Asn 25 Cys Arg Cys Val	Ile Leu Asp Gln Cys 90 Glu	Arg Ser Glu Arg 75 Thr	Ser Asp Lys 60 Asp Thr Asp	Ser Thr 45 Pro Ala Met	Ala 30 Asp Phe Met Glu Thr 110	Asp Cys Cys Cys Asp 95	Leu Asn Ala Cys 80 Ala

Cys Leu Arg Thr Phe Asp Cys Gly Pro Gly Leu Cys Cys Ala Arg His 145 150 Phe Trp Thr Lys Ile Cys Lys Pro Val Leu Leu Glu Gly Gln Val Cys 165 170 Ser Arg Arg Gly His Lys Asp Thr Ala Gln Ala Pro Glu Ile Phe Gln 185 Arg Cys Asp Cys Gly Pro Gly Leu Leu Cys Arg Ser Gln Leu Thr Ser 195 Asn Arg Gln His Ala Arg Leu Arg Val Cys Gln Lys Ile Glu Lys Leu 215 220 <210> 6 <211> 672 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(672) <400> 6 atg gtg gcg gcc gtc ctg ctg ggg ctg agc tgg ctc tgc tct ccc ctg 48 Met Val Ala Ala Val Leu Leu Gly Leu Ser Trp Leu Cys Ser Pro Leu 10 gga gct ctg gtc ctg gac ttc aac aac atc agg agc tct gct gac ctg 96 Gly Ala Leu Val Leu Asp Phe Asn Asn Ile Arg Ser Ser Ala Asp Leu cat ggg gcc cgg aag ggc tca cag tgc ctg tct gac acg gac tgc aat His Gly Ala Arg Lys Gly Ser Gln Cys Leu Ser Asp Thr Asp Cys Asn 35 40 acc aga aag ttc tgc ctc cag ccc cgc gat gag aag ccg ttc tgt gct Thr Arg Lys Phe Cys Leu Gln Pro Arg Asp Glu Lys Pro Phe Cys Ala 50 aca tgt cgt ggg ttg cgg agg agg tgc cag cga gat gcc atg tgc tgc Thr Cys Arg Gly Leu Arg Arg Cys Gln Arg Asp Ala Met Cys Cys 240 65 70 75 cct ggg aca ctc tgt gtg aac gat gtt tgt act acg atg gaa gat gca Pro Gly Thr Leu Cys Val Asn Asp Val Cys Thr Thr Met Glu Asp Ala 288 85 90 acc cca ata tta gaa agg cag ctt gat gag caa gat ggc aca cat gca Thr Pro Ile Leu Glu Arg Gln Leu Asp Glu Gln Asp Gly Thr His Ala 336 100 105 gaa gga aca act ggg cac cca gtc cag gaa aac caa ccc aaa agg aag Glu Gly Thr Thr Gly His Pro Val Gln Glu Asn Gln Pro Lys Arg Lys 384

Pro Ser Ile Lys Lys Ser Gln Gly Arg Lys Gly Gln Glu Gly Glu Ser 130 135 140	32
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aat aag tac Asn Lys Tyr												353
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gga ata tgc Gly Ile Cys												545
gaa acc atc Glu Thr Ile	act gaa Thr Glu 155	agc ttt Ser Phe	ggt Gly	aat Asn 160	gat Asp	cat His	agc Ser	acc Thr	ttg Leu 165	gat Asp	G] À aaa	593
tat tcc aga Tyr Ser Arg 170	Arg Thr											641
caa gaa ggt Gln Glu Gly 185												689
tgt tgt gct Cys Cys Ala 200												737
gaa ggt caa Glu Gly Glr		Thr Lys										785
gaa ata tto Glu Ile Phe												833
cag aaa gat Gln Lys Asp 250	His His											881
cag aga cac Gln Arg His 265		gct atcc	aaaat	ig ca	agtga	aacto	c ctt	ttat	ata			930
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Leu Gly Gly Ala Ala Gly His Pro Gly Ser Ala Val Ser Ala Ala Pro 50 55 60

Gly Ile Leu Tyr Pro Gly Gly Asn Lys Tyr Gln Thr Ile Asp Asn Tyr
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Gln Pro Tyr Pro Cys Ala Glu Asp Glu Glu Cys Gly Thr Asp Glu Tyr 85 90 95

Cys Ala Ser Pro Thr Arg Gly Gly Asp Ala Gly Val Gln Ile Cys Leu 100 105 110

Ala Cys Arg Lys Arg Lys Arg Cys Met Arg His Ala Met Cys Cys
115 120 125

Pro Gly Asn Tyr Cys Lys Asn Gly Ile Cys Val Ser Ser Asp Gln Asn 130 135 140

His Phe Arg Gly Glu Ile Glu Glu Thr Ile Thr Glu Ser Phe Gly Asn 145 150 155 160

Asp His Ser Thr Leu Asp Gly Tyr Ser Arg Arg Thr Thr Leu Ser Ser 165 170 175

Lys Met Tyr His Thr Lys Gly Gln Glu Gly Ser Val Cys Leu Arg Ser 180 185 Ser Asp Cys Ala Ser Gly Leu Cys Cys Ala Arg His Phe Trp Ser Lys Ile Cys Lys Pro Val Leu Lys Glu Gly Gln Val Cys Thr Lys His Arg 215 Arg Lys Gly Ser His Gly Leu Glu Ile Phe Gln Arg Cys Tyr Cys Gly 225 230 235 Glu Gly Leu Ser Cys Arg Ile Gln Lys Asp His His Gln Ala Ser Asn 250 Ser Ser Arg Leu His Thr Cys Gln Arg His 260 <210> 9 <211> 798 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(798) <400> 9 atg atg gct ctg ggc gca gcg gga gct acc cgg gtc ttt gtc gcg atg Met Met Ala Leu Gly Ala Ala Gly Ala Thr Arg Val Phe Val Ala Met 5 gta gcg gcg gct ctc ggc ggc cac cct ctg ctg gga gtg agc gcc acc Val Ala Ala Leu Gly Gly His Pro Leu Leu Gly Val Ser Ala Thr 20 ttg aac tcg gtt ctc aat tcc aac gct atc aag aac ctg ccc cca ccg 144 Leu Asn Ser Val Leu Asn Ser Asn Ala Ile Lys Asn Leu Pro Pro ctg ggc ggc gct gcg ggg cac cca ggc tct gca gtc agc gcc gcg ccg 192 Leu Gly Gly Ala Ala Gly His Pro Gly Ser Ala Val Ser Ala Ala Pro 55 gga atc ctg tac ccg ggc ggg aat aag tac cag acc att gac aac tac 240 Gly Ile Leu Tyr Pro Gly Gly Asn Lys Tyr Gln Thr Ile Asp Asn Tyr 70 cag ecg tac ecg tge gea gag gac gag tge gge act gat gag tac 288 Gln Pro Tyr Pro Cys Ala Glu Asp Glu Glu Cys Gly Thr Asp Glu Tyr

90

336

tgc gct agt ccc acc cgc gga ggg gac gca ggc gtg caa atc tgt ctc

Cys Ala Ser Pro Thr Arg Gly Gly Asp Ala Gly Val Gln Ile Cys Leu

105

85

100

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ccc ggg aat tac tgc aaa aat gga ata tgc gtg tct tct gat caa a Pro Gly Asn Tyr Cys Lys Asn Gly Ile Cys Val Ser Ser Asp Gln A 130 135 140	at 432 .sn
cat ttc cga gga gaa att gag gaa acc atc act gaa agc ttt ggt a His Phe Arg Gly Glu Ile Glu Glu Thr Ile Thr Glu Ser Phe Gly A 145 150 155 1	at 480 sn 60
gat cat agc acc ttg gat ggg tat tcc aga aga acc acc ttg tct to Asp His Ser Thr Leu Asp Gly Tyr Ser Arg Arg Thr Thr Leu Ser So 165 170 175	ca 528 er
aaa atg tat cac acc aaa gga caa gaa ggt tct gtt tgt ctc cgg to Lys Met Tyr His Thr Lys Gly Gln Glu Gly Ser Val Cys Leu Arg So 180 185 190	ca 576 er
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gaa ggt ctg tct tgc cgg ata cag aaa gat cac cat caa gcc agt aa Glu Gly Leu Ser Cys Arg Ile Gln Lys Asp His His Gln Ala Ser As: 245 250 255	t 768 n
tct tct agg ctt cac act tgt cag aga cac Ser Ser Arg Leu His Thr Cys Gln Arg His 260 265	798
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	50	1111	Giu	ser	116	Leu 55	Thr	Pro	His	Ile	Pro 60	Ala	Leu	Asp	ggt Gly	192
65	my	1115	Arg	Asp	70	Asn	His	Gly	His	Tyr 75	Ser	Asn	His	Asp	80	240
027	11p	GIII	ASII	85	GIY	Arg	Pro	His	Thr 90	Lys	atg Met	Ser	His	Ile 95	Lys	288
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ttt Phe	:	115	nia .	Arg	nis	Pne	120	Thr	Lys	Ile	Cys :	Lys 1 125	Pro	Val	Leu	384
	130	JIY (JIU .	vai (cys :	inr . 135	ràs (Gln .	Arg	Lys :	Lys (140	Sly S	Ser	His	Gly	432
ctg g Leu G 145	-u 1	.10 1	ine (3111 2	150	ys A	Asp (lys 1	Ala 1	Lys (155	Gly I	eu S	Ser	Cys	Lys 160	480
gta t Val T	~P -	ys A	.sp A	.65	inr 1	yr s	er S	er I	ys <i>I</i> .70	Ala <i>I</i>	Arg L	eu H	is Y	gtg Val 175	tgt Cys	528
cag a Gln L	<i>y</i> 5 1	16														577
															atggc	
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<211> 179

<212> PRT

<213> Homo sapiens

<400> 11

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Ser Ser Ala Cys Met Val Cys Arg Arg Lys Lys Lys Arg Cys His Arg 20 25 30

Asp Gly Met Cys Cys Pro Ser Thr Arg Cys Asn Asn Gly Ile Cys Ile
35 40 45

Pro Val Thr Glu Ser Ile Leu Thr Pro His Ile Pro Ala Leu Asp Gly 50 55 60

Thr Arg His Arg Asp Arg Asn His Gly His Tyr Ser Asn His Asp Leu
65 70 75 80

Gly Trp Gln Asn Leu Gly Arg Pro His Thr Lys Met Ser His Ile Lys 85 90 95

Gly His Glu Gly Asp Pro Cys Leu Arg Ser Ser Asp Cys Ile Glu Gly
100 105 110

Phe Cys Cys Ala Arg His Phe Trp Thr Lys Ile Cys Lys Pro Val Leu 115 120 125

His Gln Gly Glu Val Cys Thr Lys Gln Arg Lys Lys Gly Ser His Gly 130 135 140

Val Trp Lys Asp Ala Thr Tyr Ser Ser Lys Ala Arg Leu His Val Cys 165 170 175

Gln Lys Ile

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<211> 537

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gat Asp	gg Gly	c atg y Met 35	Cys	tgo Cys	c ccc Pro	agt Ser	acc Thr	Arg	tgc Cys	aat Asn	aat Asn	ggc Gly 45	ato Ile	tgt Cys	atc Ile	144
cca Pro	gtt Val	act Thr	gaa Glu	ago Ser	ato Ile	tta Leu 55	acc Thr	cct Pro	cac His	ato Ile	ccg Pro 60	gct Ala	ctg Leu	gat Asp	ggt Gly	192
act Thr 65	cgg Arg	cac His	aga Arg	gat Asp	cga Arg 70	aac Asn	cac His	ggt Gly	cat	tac Tyr 75	tca Ser	aac Asn	cat His	gac Asp	ttg Leu 80	240
gga Gly	tgg Trp	cag Gln	aat Asn	cta Leu 85	gga Gly	aga Arg	cca Pro	cac His	act Thr 90	aag Lys	atg Met	tca Ser	cat His	ata Ile 95	aaa Lys	288
gly gag	cat His	gaa Glu	gga Gly 100	gac Asp	ccc Pro	tgc Cys	cta Leu	cga Arg 105	tca Ser	tca Ser	gac Asp	tgc Cys	att Ile 110	gaa Glu	gly aaa	336
ttt Phe	tgc Cys	tgt Cys 115	gct Ala	cgt Arg	cat His	ttc Phe	tgg Trp 120	acc Thr	aaa Lys	atc Ile	tgc Cys	aaa Lys 125	cca Pro	gtg Val	ctc Leu	384
cat His	cag Gln 130	gly aaa	gaa Glu	gtc Val	tgt Cys	acc Thr 135	aaa Lys	caa Gln	cgc Arg	aag Lys	aag Lys 140	ggt Gly	tct Ser	cat His	gly aaa	432
ctg Leu 145	gaa Glu	att Ile	ttc Phe	cag Gln	cgt Arg 150	tgc Cys	gac Asp	tgt Cys	Ala	aag Lys 155	ggc Gly	ctg Leu :	tct Ser	Cys	aaa Lys 160	480
gta Val	tgg Trp	aaa Lys .	Asp .	gcc Ala 165	acc Thr	tac Tyr :	tcc Ser	Ser	aaa Lys 170	gcc Ala	aga (Arg)	ctc (Leu I	lis	gtg Val (175	tgt Cys	528
cag a																537
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				ctg Leu												158
gct Ala	gca Ala 30	gct Ala	cct Pro	atc Ile	cat His	gat Asp 35	gct Ala	gac Asp	gcc Ala	caa Gln	gag Glu 40	agc Ser	tcc Ser	ttg Leu	ggt Gly	206
				cag Gln												254
aaa Lys	ggt Gly	aac Asn	ctg Leu	ctt Leu 65	cgg Arg	ggc Gly	ata Ile	gac Asp	agc Ser 70	tta Leu	ttc Phe	tct Ser	gcc Ala	ccc Pro 75	atg Met	302
gac Asp	ttc Phe	cgg Arg	ggc Gly 80	ctc Leu	cct Pro	gjå aaa	aac Asn	tac Tyr 85	cac His	aaa Lys	gag Glu	gag Glu	aac Asn 90	cag Gln	gag Glu	350
				aac Asn												398
atg Met	acc Thr 110	gac Asp	aac Asn	aag Lys	aca Thr	gga Gly 115	gag Glu	gtg Val	ctg Leu	atc Ile	tcc Ser 120	gag Glu	aat Asn	gtg Val	gtg Val	446
				cca Pro												494
ccc Pro	agg Arg	atg Met	gag Glu	gag Glu 145	aag Lys	gag Glu	gcc Ala	ctg Leu	gta Val 150	ccc Pro	atc Ile	cag Gln	aag Lys	gcc Ala 155	acg Thr	542
				aca Thr												590
aag Lys	ctg Leu	cca Pro 175	cgg Arg	cgg Arg	agg Arg	tcc Ser	cac His 180	cag Gln	gat Asp	gcc Ala	ctg Leu	gag Glu 185	ggc Gly	ggc Gly	cac His	638
				aag Lys												686
				cac His												734
tcc Ser				ctg												782

agg ccc tct cgg cag ctg taggggtggg gaccggggag cacctgcctg Arg Pro Ser Arg Gln Leu 240

830

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aaaaaaaaa aaaaaaaaa aaaaaaattg gcggccgc

928

<210> 14

<211> 242

<212> PRT

<213> Homo sapiens

<400> 14

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Leu Leu Leu Leu Ser Thr Leu Val Ile Pro Ser Ala Ala Pro 20 25 30

Ile His Asp Ala Asp Ala Gln Glu Ser Ser Leu Gly Leu Thr Gly Leu $35 \hspace{1cm} 40 \hspace{1cm} 45$

Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu Phe Leu Lys Gly Asn Leu
50 55 60

Leu Arg Gly Ile Asp Ser Leu Phe Ser Ala Pro Met Asp Phe Arg Gly 65 70 75 80

Leu Pro Gly Asn Tyr His Lys Glu Glu Asn Gln Glu His Gln Leu Gly
85 90 95

Asn Asn Thr Leu Ser Ser His Leu Gln Ile Asp Lys Met Thr Asp Asn 100 105 110

Lys Thr Gly Glu Val Leu Ile Ser Glu Asn Val Val Ala Ser Ile Gln
115 120 125

Pro Ala Glu Gly Ser Phe Glu Gly Asp Leu Lys Val Pro Arg Met Glu 130 135 140

Glu Lys Glu Ala Leu Val Pro Ile Gln Lys Ala Thr Asp Ser Phe His 145 150 155 160

Thr Glu Leu His Pro Arg Val Ala Phe Trp Ile Ile Lys Leu Pro Arg 165 170 175

Arg Arg Ser His Gln Asp Ala Leu Glu Gly Gly His Trp Leu Ser Glu 180 185 190

Lys Arg His Arg Leu Gln Ala Ile Arg Asp Gly Leu Arg Lys Gly Thr 195 200 205

His Lys Asp Val Leu Glu Glu Gly Thr Glu Ser Ser His Ser Arg

Leu Ser Pro Arg Lys Thr His Leu Leu Tyr Ile Leu Arg Pro Ser Arg 225 230 240

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Leu Leu Leu Leu Ser Thr Leu Val Ile Pro Ser Ala Ala Pro
20 25 30

atc cat gat gct gac gcc caa gag agc tcc ttg ggt ctc aca ggc ctc 144

Ile His Asp Ala Asp Ala Gln Glu Ser Ser Leu Gly Leu Thr Gly Leu

35 40 45

cag agc cta ctc caa ggc ttc agc cga ctt ttc ctg aaa ggt aac ctg 192 Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu Phe Leu Lys Gly Asn Leu 50 55 60

ctt cgg ggc ata gac agc tta ttc tct gcc ccc atg gac ttc cgg ggc 240 Leu Arg Gly Ile Asp Ser Leu Phe Ser Ala Pro Met Asp Phe Arg Gly 65 70 75 80

ctc cct ggg aac tac cac aaa gag gag aac cag gag cac cag ctg ggg 288
Leu Pro Gly Asn Tyr His Lys Glu Glu Asn Gln Glu His Gln Leu Gly
85 90 95

aac aac acc ctc tcc agc cac ctc cag atc gac aag atg acc gac aac 336 Asn Asn Thr Leu Ser Ser His Leu Gln Ile Asp Lys Met Thr Asp Asn 100 105 110

aag aca gga gag gtg ctg atc tcc gag aat gtg gtg gca tcc att caa 384 Lys Thr Gly Glu Val Leu Ile Ser Glu Asn Val Val Ala Ser Ile Gln 115 120 125

cca geg gag ggg agc ttc gag ggt gat ttg aag gta ccc agg atg gag
Pro Ala Glu Gly Ser Phe Glu Gly Asp Leu Lys Val Pro Arg Met Glu
130 135 140

gag aag gag gcc ctg gta ccc atc cag aag gcc acg gac agc ttc cac 480 Glu Lys Glu Ala Leu Val Pro Ile Gln Lys Ala Thr Asp Ser Phe His 145 150 155 160

aca Thr	gaa Glu	ctc Leu	cat His	ccc Pro 165	cgg Arg	gtg Val	gcc Ala	ttc Phe	tgg Trp 170	atc Ile	att Ile	aag Lys	ctg Leu	cca Pro	cgg Arg	528
cgg Arg	agg Arg	tcc Ser	cac His 180	cag Gln	gat Asp	gcc Ala	ctg Leu	gag Glu 185	ggc	ggc Gly	cac His	tgg Trp	ctc Leu 190	agc Ser	gag Glu	576
aag Lys	cga Arg	cac His 195	cgc Arg	ctg Leu	cag Gln	gcc Ala	atc Ile 200	cgg Arg	gat Asp	gga Gly	ctc Leu	cgc Arg 205	aag Lys	gly	acc Thr	624
cac His	aag Lys 210	gac Asp	gtc Val	cta Leu	gaa Glu	gag Glu 215	gly aaa	acc Thr	gag Glu	agc Ser	tcc Ser 220	tcc Ser	cac His	tcc Ser	agg Arg	672
ctg Leu 225	tcc Ser	ccc Pro	cga Arg	aag Lys	acc Thr 230	cac His	tta Leu	ctg Leu	tac Tyr	atc Ile 235	ctc Leu	agg Arg	ccc Pro	tct Ser	cgg Arg 240	720
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ctc Leu	2 Gly aaa	ggt Gly	att : Ile :	ttg Leu :	ctg Leu	tgt Cys 10	aca Thr	ctg Leu	ctg Leu	gcg Ala	gcg Ala 15	gcg Ala	gtc Val	ccc Pro	act Thr	166
gct Ala 20	cct Pro	gct Ala	cct Pro :	tcc Ser	ccg (Pro ' 25	acg Thr	gtc Val	act Thr	tgg Trp	act Thr 30	ccg Pro	gcg (Ala (gag Glu	ccg Pro	ggc Gly 35	214
			aac (Asn :													262
			gag g Glu (55													310

gcc Ala	gtg Val	gag Glu 70	1 GTS	g ato u Met	g gag	g gc u Al	a Gl	a ga u Gl	ia go .u Al	cag laA	ct g la <i>P</i>	gct Ala	aaa Lys 80	Th	g to r Se	ec er :	tct Ser	358
gag Glu	gtg Val 85	aac Asn	cto Leu	gca Ala	ago Ser	c tta r Lei 90	u Pr	t cc o Pr	c aa o As	ac t sn T	at c yr H	cac Nis 95	aat Asn	gaq Gl	g ac ı Th	c a	agc Ser	406
acg Thr 100	gag Glu	acc Thr	agg Arg	gtg Val	gga Gly 105	/ Asr	t aa n As	c ac n Th	a gt r Va	1 H	at g is V 10	tg al	cac His	cag Glr	g ga 1 Gl	u V	gtt /al .15	454
cac His	aag Lys	ata Ile	acc Thr	aac Asn 120	aac Asn	cag Glr	g agt	t gg r Gl	a ca y Gl 12	n Va	g g al V	tc al	ttt Phe	tct	ga Gl 13	u I	ca hr	502
gtc . Val	att Ile	aca Thr	tct Ser 135	gta Val	gly aaa	gat Asp	gaa Glu	a gaa a Glu 140	ı Gl	c aa y Ly	ig ag 's A:	gg rg	agc Ser	cat His 145	Gl۱	a t	gt ys	550
atc a	rre .	gat Asp 150	gaa Glu	gac Asp	tgt Cys	gly aaa	Pro	Thr	age Are	g ta g Ty	c to	ys (cag Gln 160	ttc Phe	tc: Se:	c a	gc er	598
ttc a Phe I	aag Lys '	tac Tyr	acc Thr	tgc Cys	cag Gln	cca Pro 170	tgc Cys	cgg Arg	gad Asp	c ca o Gl	g ca n Gl 17	n N	atg Met	cta Leu	tgc Cys	a a c	cc nr	646
cga g Arg A 180	sp s	agt Ser	gag Glu	Cys	tgt Cys 185	gga Gly	gac Asp	cag Gln	cto Leu	tg Cy:	s Al	c t a T	gg (ggt Gly	cac His	C)	/S	694
acc c	aa a ln I	aag (Ala	acc Thr 200	aaa Lys	ggt Gly	ggc Gly	aat Asn	999 Gly 205	Thi	c at	c t e C	gt g ys <i>l</i>	gac Asp	aac Asn 210	ca Gl	ıg .n	742
agg g Arg A	at t sp C	ys (cag Gln 215	cct (Pro (ggc Gly	ctg Leu	tgt Cys	tgt Cys 220	gcc Ala	tto Phe	c ca. e Gl:	a a n A	rg (ggc 31y 225	ctg Leu	ct Le	g u	790
ttc c Phe P	10 0	tg t al (cgc (Cys '	aca o Thr 1	ccc Pro	ctg Leu	ccc Pro 235	gtg Val	gag Glu	gga Gly	gag Glu	u Le	tc t eu C 40	gc Sys	cat His	ga As	c p	838
ece ad Pro Tl	cc a hr S 45	gc c er G	cag d Sln 1	ctg d Leu I	Leu .	gat Asp 250	ctc Leu	atc Ile	acc Thr	tgg Trp	gaa Glu 255	ı Le	eu G	ag lu	cct Pro	ga. Gl:	a u	886
gga go Gly Al 260	ct t	tg g eu A	ac d	arg (gc Cys 165	ccc Pro	tgc Cys	gcc Ala	agt Ser	ggc Gly 270	Cto	ct Le	a t	ys (cag Gln	cca Pro 275)	934
cac ag His Se	go da er Hi	ac a is S	er 1	tg g eu V 80	tg t	tac a Tyr 1	atg Met	Cys	aag Lys 285	cca Pro	gcc Ala	tt. Ph	ie Va	al (ggc 1y	ago Ser	2	982

tac gaa gat gtt ggc ttc ata ggg gaa gtg cgc cag gag ctg gaa gac Tyr Glu Asp Val Gly Phe Ile Gly Glu Val Arg Gln Glu Leu Glu Asp 310 315 320 ctg gag cgg agc cta gcc cag gag atg gca ttt gag ggg cct gcc cct Leu Glu Arg Ser Leu Ala Gln Glu Met Ala Phe Glu Gly Pro Ala Pro
ctg gag cgg agc cta gcc cag gag atg gca ttt gag ggg cct gcc cct 1126 Leu Glu Arg Ser Leu Ala Gln Glu Met Ala Phe Glu Gly Pro Ala Des
325 330 335
gtg gag tca cta ggc gga gag gag att taggcccaga cccagctgag 1176 Val Glu Ser Leu Gly Gly Glu Glu Ile 340 345
tcactggtag atgtgcaata gaaatggcta atttattttc ccaggagtgt ccccaagtgt 1236
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<213> Homo sapiens

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- Glu Pro Gly Pro Ala Leu Asn Tyr Pro Gln Glu Glu Ala Thr Leu Asn 35 40 45
- Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys
 50 55 60
- Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Lys
 65 70 75 80
- Thr Ser Ser Glu Val Asn Leu Ala Ser Leu Pro Pro Asn Tyr His Asn 85 90 95
- Glu Thr Ser Thr Glu Thr Arg Val Gly Asn Asn Thr Val His Val His 100 105 110
- Gln Glu Val His Lys Ile Thr Asn Asn Gln Ser Gly Gln Val Val Phe 115 120 125
- Ser Glu Thr Val Ile Thr Ser Val Gly Asp Glu Glu Gly Lys Arg Ser 130 135 140
- Phe Ser Ser Phe Lys Tyr Thr Cys Gln Pro Cys Arg Asp Gln Gln Met 165 170 175
- Leu Cys Thr Arg Asp Ser Glu Cys Cys Gly Asp Gln Leu Cys Ala Trp
- Gly His Cys Thr Gln Lys Ala Thr Lys Gly Gly Asn Gly Thr Ile Cys 195 200 205
- Asp Asn Gln Arg Asp Cys Gln Pro Gly Leu Cys Cys Ala Phe Gln Arg 210 215 220
- Gly Leu Leu Phe Pro Val Cys Thr Pro Leu Pro Val Glu Gly Glu Leu 225 230 235 240
- Cys His Asp Pro Thr Ser Gln Leu Leu Asp Leu Ile Thr Trp Glu Leu 245 250 255

Glu Pro Glu Gly Ala Leu Asp Arg Cys Pro Cys Ala Ser Gly Leu Leu

260

265 Cys Gln Pro His Ser His Ser Leu Val Tyr Met Cys Lys Pro Ala Phe 275 Val Gly Ser His Asp His Ser Glu Glu Ser Gln Leu Pro Arg Glu Ala 295 Pro Asp Glu Tyr Glu Asp Val Gly Phe Ile Gly Glu Val Arg Gln Glu 310 315 Leu Glu Asp Leu Glu Arg Ser Leu Ala Gln Glu Met Ala Phe Glu Gly 330 Pro Ala Pro Val Glu Ser Leu Gly Gly Glu Glu Ile 340 345 <210> 18 <211> 1047 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (1)..(1047) <400> 18 atg cag egg etc ggg ggt att ttg etg tgt aca etg etg geg geg 48 Met Gln Arg Leu Gly Gly Ile Leu Leu Cys Thr Leu Leu Ala Ala ٦ 5 gtc ccc act gct cct gct cct tcc ccg acg gtc act tgg act ccg gcg 96 Val Pro Thr Ala Pro Ala Pro Ser Pro Thr Val Thr Trp Thr Pro Ala 20 25 gag ccg ggc cca gct ctc aac tac cct cag gag gaa gct acg ctc aat 144 Glu Pro Gly Pro Ala Leu Asn Tyr Pro Gln Glu Glu Ala Thr Leu Asn 35 gag atg ttt cga gag gtg gag gag ctg atg gaa gac act cag cac aaa 192 Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys 55 ctg cgc agt gcc gtg gag gag atg gag gcg gaa gaa gca gct gct aaa 240 Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Ala Lys 70 acg tee tet gag gtg aac etg gea age tta eet eee aac tat eac aat 288 Thr Ser Ser Glu Val Asn Leu Ala Ser Leu Pro Pro Asn Tyr His Asn 85 gag acc agc acg gag acc agg gtg gga aat aac aca gtc cat gtg cac Glu Thr Ser Thr Glu Thr Arg Val Gly Asn Asn Thr Val His Val His 100 105

		115	115	λ2 T	Te L	nr .	Asn 120	As	n G	ln s	Ser	Gly	12:	n Va 5	al V	al	Phe	
	gag a Glu 1 130	v	ar r	1e 1	1:	er (vaı	G13	y As	sp G	3lu	Glu 140	Gl	/ Ly	s A	rg	Ser	432
cat His 145	gaa t Glu (gt a Cys I	tc a le I	tt ga le As 19	sp G.	aa g lu <i>A</i>	gac Asp	tgt Cys	gg Gl	y P	ro 55	acc Thr	agg Arg	ı ta ı Ty	c t	gc ys	cag Gln 160	480
ttc Phe	tcc a Ser S	igc t Ser P	tc aa he Ly 10	's Ty	ıc ac r Th	c t	gc 'ys	cag Gln	r cc Pr 17	0 C	gc ys .	cgg Arg	gac Asp	ca Gl:	n G	ag ln 75	atg Met	528
cta (Leu (tgc a Cys T	cc co hr Ai	y As	c ag p Se	t ga r Gl	g t u C	ys	tgt Cys 185	gg Gl	aga yA:	ac (cag Gln	ctg Leu	tgi Cys	s Al	cc .a	tgg Trp	576
ggt o	C	gc ac ys Th 95	cc ca ir Gl	a aag n Ly:	g gc s Al	a T	cc hr 00	aaa Lys	gg! Gly	t gg y Gl	gc a ly <i>p</i>	Asn	999 Gly 205	acc Thr	at Il	c e	tgt Cys	624
gac a Asp A 2	ac ca sn Gl	ag ag ln Ar	g ga g Asj	t tgo o Cys	c cag S Glr 215	נץ ב	ct g	ggc Gly	cto	g tg ı Cy	s C	gt ys 20	gcc Ala	ttc Phe	ca Gl	a a n 1	aga Arg	672
ggc c Gly L 225	tg ct eu Le	g tt eu Ph	c cco e Pro	gtg Val 230	. Сув	ac Th	ea o ir I	ecc Pro	ctg Leu	cc Pr 23	o V	tg g	gag Slu	gga Gly	ga Gl	ı I	etc Leu 140	720
tgc ca Cys H	at ga is As	c cco p Pro	acc Thr 245	ser	cag Gln	ct Le	g c	eu	gat Asp 250	Le	c a u I	tc a le T	cc hr	tgg Trp	gaa Glu 259	ı L	tg eu	768
gag co Glu Pı	ct ga co Gl	a gga u Gly 260	/ Ата	ttg Leu	gac Asp	cg Ar	g C	gc ys 65	ccc Pro	tg:	c go	cc a la S	er (ggc Gly 270	cto	c ı L	ta eu	816
tgc ca Cys Gl	n Pro 27!	J 111.5	agc Ser	cac His	agt Ser	cto Let 280	u v.	tg :	tac Tyr	atg Met	g tg Cy	s L	ag d ys 1 85	cca Pro	gcc Ala	t: Pl	tc ne	864
gtg gg Val Gl 29	7 001	cat His	gac Asp	cac His	agt Ser 295	gag Glı	g ga	ag a lu S	agc Ser	cag Gln	ct Le 30	u P	cc a	ıgg ırg	gag Glu	go Al	cc la	912
ccg ga Pro As 305	t gag p Glu	tac Tyr	gaa Glu	gat Asp 310	gtt Val	gg c	c tt	ic a ne I	ita le	999 Gly 315	Gl	agt uVa	eg c	gc .rg	cag Gln	ga Gl 32	u	960
ctg gaa Leu Gli	a gac u Asp	ctg Leu	gag Glu 325	cgg Arg	agc Ser	cta Leu	gc Al	a G	ag ln 30	gag Glu	ato Mei	g go t Al	a t .a P	he (gag Glu 335	gl	A a	1008

cct gcc cct gtg gag tca cta ggc gga gag gag gag att Pro Ala Pro Val Glu Ser Leu Gly Gly Glu Glu Glu Ile 340 - 345

1047

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<211> 8
<212> PRT
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